

FOODS OF THE TAWNY FROGMOUTH.

By EDITH COLEMAN, Blackburn, Vic.

Although much has been written on the feeding habits of Tawny Frogmouth (*Podargus strigoides*) there are still a few open questions. Most of my own observations have been made in a garden, some two acres in extent, and at a nearby creek-side, where Frogmouths nest freely.

It is a bird which forms an attachment to one locality, even to one tree. Mr. A. Hardie (Maffra) stated in October, 1934, that one old Frogmouth had been on his property for at least 23 years. Here — at Blackburn — Frogmouths have nested year after year either in our own trees or in others close by.

At dusk, parent birds and their young, usually two, have flown confidently about the garden. On one occasion there were three adults and two young. One adult appeared to be an intruder, and later disappeared.

The Frogmouth has such poor perching feet, the toes are so short and the feet so small for its size, that they encompass but a small part of the large branches on which it rests. Many young ones are found on the ground in stormy weather, and several of these waifs have found a home in this garden. Until recently, a very tall messmate (*E. obliqua*) grew on our land. It was a landmark which could be seen from a distance of many miles. From this tree several young Frogmouths were blown. To replace them was impossible. Doubtless the parents would have fed them at dusk had



Showing the poorly developed feet for a bird of such great size. No wonder so many young ones are blown from their perches during a storm.

they survived until the end of the day, but we decided to succour them, and while doing so learned much of Frogmouth ways.

An adult bird with cut wing, picked up on the road, was brought to me. Although he spent five years "waiting for his wings," he was never able to fly properly. He died (20/6/42) on a bitterly cold night. Two other dead birds were found on the lawn that morning.

A second Frogmouth was brought to me which, although fully fledged, and apparently uninjured, did not fly. As it knew at once what to do with pieces of beef, I assumed that it too had been a captive.

With none of the wild birds that haunted the garden was there any sustained flight. Although they flew from tree to tree some 15 to 20 yards apart, only once or twice did they appear to hawk for insects, but they often gave the impression of "pursuing" them. They did not veer or tack, but flew straight to their objective. From horizontal branches, clothes-props or posts, they flew to the ground, appeared to snatch up something and returned to tree or post. From the sometimes great distance of their watching-posts to the ground one assumed that they possess marvellous eyesight in the dusk.

Often young ones clung to the bole of a tree and were fed in this position. At no time did their movements suggest that they were following up swift creatures such as mice. One assumed that the prey was motionless or moving slowly, which would rule out mice, for which, in captivity, the Frogmouth shows a liking.

I often saw them pounce, with open wings. It was not until Dec. 30, 1943, that I learned definitely that they were capturing hosts of small golden-brown beetles (*Heteronyx insignis*), a species which feeds on grass roots, emerging at dusk just when the Frogmouths leave the perches on which they have been practically motionless for some 15 hours.

The great gape of the Frogmouth's bill certainly suggests use as a sack for bagging insects on the wing, and to some extent I think it is so used; as, for instance, when it flies at dusk from tree-trunk to tree-trunk in our paddock, for fully 30 yards without alighting, and immediately feeds a waiting youngster. Sometimes they would fly from one end of the tennis court to the other several times without alighting, and then feed a baby which was waiting high up on the top of the wire netting.

I think, however, that in addition to trapping beetles, etc., on the ground, the bill may be used as a capacious trap for engulfing creatures that move towards it as it rests motionless on a branch. Its shape should facilitate capture of small, unwary

mammals such as young possums, phalangers, etc., that are approaching it. The hooked tip of the upper mandible fits over a sinus in the lower one, making a deadly vice in which its prey may "all hope abandon."

One might apply the gamekeeper's test, as recorded by Richard Jefferies in discussing the Barn-owl: "Just look at his beak! Tell me that there bill weren't made to tear a bird's breast to bits; why, an owl have got a hooked bill like an eagle. It stands to reason, as he must be in mischief." So the poor owls were shot and nailed to the barn by ignorant keepers, despite the fact that wiser farmers kept them to destroy mice, which multiplied incredibly in those days when corn was threshed with a flail on the floor of the barn.

Our Frogmouth, too, loves mice, but I have not been able to discover whether he has the owl's facility in catching them. Certainly his open-winged pounce on beetles resembles the owl's manner of falling on its prey with open wings, when beating the meadows for mice.

Nearly 100 years ago, John Gould, who did not believe in the hawking theory, suggested that the Frogmouth crept along branches in search of such insects "as are in a state of repose." I would suggest that the creeping is done by the insects, and occasionally small mammals, while the Frogmouth is in a state of repose, or "freezing," so that they walk right into his parlour, as it were. Gould based his view on the stomach content of one Frogmouth. This included phasmids and cicadae, which, he believed, never move at night. Actually, both of these insects are active at dusk, just when the Frogmouth shakes off his daytime lethargy. The "freezing" should facilitate capture of crepuscular creatures such as phasmids, cicadas, crickets and mountain-grasshoppers.

This Bittern-like freezing is not always necessary as a protective measure, but may sometimes be a lying-in-wait attitude. The Frogmouth has no near vision. To focus on near objects he arches his neck, like an elderly person who bends his head to look over his spectacles. He would probably see the approach of prey and move to meet it, instead of waiting until it was beneath him.

The Frogmouth is stated to be nocturnal. Those which I have kept were active only in the dusk of evening and very early morning, except on moonlight nights. Whenever I visited their enclosure during the dark hours of the night they were motionless.

From my observation of captive Phasmids, over some five or six years, they too appear to be crepuscular, never moving in the dark hours of the night. Seeing the spider-like movements of these great insects, one realises what an easy prey they would be for a hungry Frogmouth.

Except on moonlit nights I have found domesticated possums to be crepuscular, rather than nocturnal. According to Ronald Munro (*Wild Life*, 1940) parent Frogmouths fed their baby in the early part of the night, with long spells between as midnight approached. In another issue of the same journal he described the female as hunting in the light of a full moon; the male brought food before midnight and before dawn. One parent flew with a moth which it hit against a tree to kill it.

There are several records of treecreepers as victims of the Frogmouth. This bird is a late forager, and will itself, at a sound, freeze on the hole of a tree, a habit that should make it an easy prey. T. P. Moore, April, 1938, watched a treecreeper fly on to what appeared to be a bit of dead wood: "The top of that bit of dead wood switched round and opened in a flash, taking in the flapping little woodpecker."

Roy Wheeler (*Emu*, 1943) saw a Frogmouth battering feathers off its prey, a treecreeper again. I would suggest that the beating was not to rid the bird of its feathers, which the Frogmouth is quite happy to swallow, nor to crush the bones, but to "kill" it, on instinctive action, even when quite unnecessary, as when a dead mouse is fed to it. However, I have never fed a living mouse or bird to my Frogmouths, so I write with no authority on this point. Captive birds gulp down meat instantly, but mice and nestlings, although already dead, are sometimes "killed" with a kookaburra-like flip, as if cracking a short whip.

One of David Fleay's Frogmouths beat a half-grown rat to pulp before swallowing it." He tells me that he had been attracted to Frogmouths on tree-limbs at night through the beating sounds they make in thrashing frogs against a bough.

There was rarely any attempt to batter the mice I fed to my pets. They were gulped instantly, although a jerk was sometimes given afterwards as if to alter the position of the mouse within the bill—I assumed to facilitate swallowing. Often the bird remained for more than a minute, with the tail of a mouse protruding from its bill, before giving the jerk.

Mealworms fed alive were instantly rejected, although when crushed they were refished. If the Frogmouth has the bird-of-prey habit of ejecting pellets of bones, fur, etc., I have never noted it, in the garden or beyond, or under the perches of tame ones, even after mice had been swallowed whole. This suggests that the digestive juices are able to deal with such things.

Some birds are said to eat tree-bark to aid in ejecting pellets. According to Pycraft, the great crested grebe, instead of loading its gizzard with stones for digestive purposes, uses its own feathers.

Although neither carnivorous nor a bird of prey in the accepted sense, the Frogmouth has adopted a partly fresh diet. He is often seen watching for frogs; and as for nestlings, he is condemned out of the shrieking bills of other birds who bitterly resent his proximity. How they hate him! I have seen them flutter, screaming, round the vacant post on which he sunned himself the day before. One feels that there must be some justification for such bitter hatred.

The Frogmouth is indeed an ardent sun-worshipper. See him as he lies, perfectly flat, wings at fullest stretch, on branch or ground, in a patch of warm sunshine. Yet not often may he indulge in the passion. He is no sooner discovered than he is harried by many birds, who rush to a concerted attack.

Published analyses of the stomach-content of Frogmouths have shown only a small percentage of birds and mice in his diet. The researches of Dr. Serventy and others (*Emu*, Oct., 1936) show most of his victims to be nocturnal (crepuscular?) and un-winged. After sifting much material, Dr. Serventy pronounced the Frogmouth chiefly a ground feeder. He records the stomach content of a Frogmouth, analysed by Mr. J. Sutton, consisting of 13 specimens—crickets, spiders, centipedes, 1 mantis and 1 moth-larva, all nocturnal, except one, and only three of them winged.

William Heathcote (*Wild Life*, 1943) records the capture of large moths (emperor and wattle-goat) dragon-flies and three large green leaf-insects (Phasmids). The Phasmids were killed by hitting them on a branch, while held in the beak. Often he was able, like David Fleay, to locate the birds by this sound. He had seen them at a street light. They would keep out of the circle of light and catch insects as they flew into the shade. As Frogmouths in his garden often flew to the street light just across the road, I assumed that they were capturing moths, beetles, etc.

In Dr. Serventy's analyses, moths formed only a negligible part of the diet, but in this garden they often gave the impression of pursuing moths, and even of taking them from tree trunks. Those on the wing were quite literally pursued. There was never any sustained hawking, but a direct flight from the tree to prey and back to tree.

PERSONAL NOTES

Members will be glad to know that Mr. R. H. Croll, a former President of the Victorian Field Naturalists' Club, who has been ill for several months, is considerably improved in health. A new book of his editorship—correspondence between the artists Roberts and Streeton—was recently issued.

Another new book by the Editor of this journal, Mr. A. H. Chisholm, is the life-story of the poet C. J. Dennis. It is entitled *The Making of a Sentimental Blake*.